Uninterruptible power supply - QUINT4-UPS/24DC/24DC/20/EIP

2907074

https://www.phoenixcontact.com/in/products/2907074

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QUINT UPS with IQ Technology, RJ45 communication interfaces (EtherNet/IP™), for DIN rail mounting, input: 24 V DC, output: 24 V DC / 20 A, charging current: 5 A

Product Description

The intelligent QUINT UPS for integration into established industrial networks: your systems continue to be supplied with uninterrupted power, even in the event of a mains failure. The battery management system with IQ Technology and a powerful battery charger ensures superior system availability.

Your advantages

- Easy integration into networks using PROFINET, EtherNet/IP, EtherCAT® and USB interfaces
- Evaluation of state of health (SOH) and state of charge (SOC), thanks to the intelligent battery management system (BMS)
- Automatic recognition of the battery capacities and technologies (VRLA-WTR, LI-ION)
- Monitoring of output current and voltage, as well as manual connection and disconnection of the system
- SFB Technology selectively trips standard miniature circuit breakers. Loads connected in parallel continue working.

Commercial Data

Item number	2907074
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMU
Product Key	CMUI43
Catalog Page	Page 319 (C-4-2019)
GTIN	4055626171708
Weight per Piece (including packing)	721 g
Weight per Piece (excluding packing)	721 g
Customs tariff number	85371091
Country of origin	CN

Technical Data

Input data

Input voltage	24 V DC
Input voltage range	18 V DC ... 30 V DC
	18 V DC ... 32 V DC
Electric strength, max.	35 V DC
Internal input fuse	no
Voltage type of supply voltage	DC
Inrush current	≤ 8 A (≤ 4 ms)
Reverse polarity protection	yes
Fixed backup threshold	22 V DC
Dynamic activation threshold	> 1 V / 100 ms
Switch-on time	max. 3 s
Switch-on time during battery operation (Bat.-Start)	8 s
Voltage drop, input/output	0.4 V DC
Current consumption I_N (U_N, I_{OUT} = I_N, I_{charge} = 0)	20.1 A
Current consumption I_{max} (U_N, I_{OUT} = $I_{Stat.Boost}$, $I_{charge = max}$)	31.2 A
Current consumption $I_{No-Load}$(U_N, I_{OUT} = 0, I_{charge} = 0)	105 mA
Current consumption I_{charge} (U_N, I_{OUT} = 0, I_{charge} = max)	6.1 A
Power consumption P_N (U_N, I_{OUT} = I_N, I_{charge} = 0)	475 W
Power consumption P_{max} (U_N, I_{OUT} = $I_{Stat.Boost}$, I_{charge} = max)	740 W
Power consumption $P_{No-Load}$ (U_N, I_{OUT} = 0, I_{charge} = 0)	2.6 W
Power consumption P_{charge} (U_N, I_{OUT} = 0, I_{charge} = max)	148 W

Output data

Efficiency	typ. 97 %
Number of outputs	1
Short-circuit-proof	yes
No-load proof	yes
Switch-over time	0 ms
UPS connection in parallel	no
UPS connection in series	no
Energy storage device connection in parallel	Yes, 5 (observe line protection)
Energy storage device connection in series	no

Mains operation

Output voltage	24 V DC (U_{OUT} = U_{IN} - 0.4 V DC)
Output voltage range	18 V DC ... 30 V DC
	18 V DC ... 32 V DC
Output current I_N	20 A
Static Boost ($I_{Stat.Boost}$)	25 A

Dynamic Boost ($I_{Dyn.Boost}$)	30 A (5 s)
Selective Fuse Breaking (I_{SFB})	120 A (15 ms)
Output power P_{OUT} (U_N, I_{OUT} = I_N)	480 W
Output power P_{OUT} (U_N, I_{OUT} = $I_{stat.Boost}$)	600 W

Battery operation

Output voltage	24 V DC (U_{OUT} = U_{BAT} - 0.4 V DC)
Output voltage range	19 V DC ... 32 V DC
Output current I_N	20 A
Static Boost ($I_{Stat.Boost}$)	25 A
Dynamic Boost ($I_{Dyn.Boost}$)	30 A (5 s)
Selective Fuse Breaking (I_{SFB})	120 A (15 ms)
Output power P_{OUT} (U_N, I_{OUT} = I_N)	480 W
Output power P_{OUT} (U_N, I_{OUT} = $I_{stat.Boost}$)	600 W

Energy storage

End-of-charge voltage	32 V DC
End-of-charge voltage (temperature-compensated)	25 V DC ... 32 V DC
Charging current (configurable)	5 A
Nominal capacity (without additional charger)	3 Ah ... 100 Ah
Max. capacity	135 Ah
Charging time	202.5 h
Buffer time	19 min. (12 Ah)
Deep discharge protection	19.2 V DC
Battery technology	VRLA, VRLA-WTR, LI-ION
Charge characteristic curve	IU_0U
IQ-Technology	yes
Temperature sensor	yes
Temperature compensation (configurable)	42 mV/K

Connection data

Input

Position	1.x

Conductor connection

Connection method	Screw connection
rigid	0.2 mm² ... 6 mm²
flexible	0.2 mm² ... 4 mm²
flexible with ferrule without plastic sleeve	0.2 mm² ... 4 mm²
flexible with ferrule with plastic sleeve	0.2 mm² ... 4 mm²
rigid (AWG)	30 ... 10 (Cu)
Stripping length	8 mm (rigid/flexible)
Tightening torque	0.5 Nm ... 0.6 Nm

Drive form screw head	Slotted L

Output

Position	2.x

Conductor connection

Connection method	Screw connection
rigid	0.2 mm² ... 6 mm²
flexible	0.2 mm² ... 4 mm²
flexible with ferrule without plastic sleeve	0.2 mm² ... 4 mm²
flexible with ferrule with plastic sleeve	0.2 mm² ... 4 mm²
rigid (AWG)	30 ... 10 (Cu)
Stripping length	8 mm (rigid/flexible)
Tightening torque	0.5 Nm ... 0.6 Nm
Drive form screw head	Slotted L

Signal

Position	3.x

Conductor connection

Connection method	Push-in connection
rigid	0.2 mm² ... 1 mm²
flexible	0.2 mm² ... 1 mm²
flexible with ferrule without plastic sleeve	0.2 mm² ... 0.75 mm²
	0.5 mm² (recommended)
flexible with ferrule with plastic sleeve	0.2 mm² ... 0.75 mm²
rigid (AWG)	24 ... 16 (Cu)
Stripping length	8 mm (rigid/flexible)

Interfaces

Interface	EtherNet/IP (Modbus/TCP)
Number of interfaces	2
Connection method	RJ45 socket
Locking	Locking clip
Transmission physics	Twisted-Pair
Features	Autonegotiation
	Autocrossing
	Half- or full-duplex
	automatic recognition
	Optional: manually adjustable
Topology	Star
	Line
Transmission speed	10 Mbps ... 100 Mbps
Transmission length	max. 100 m

Cycle time	30 ms (Default)
Access time	≤ 2 s
Supported protocols	EtherNet/IP□ (Explicit Messaging, Implicit Messaging)
	BootP
	DHCP
	DLR
	Modbus/TCP
	HTTPS (Webserver)
Chipset	Renesas R-IN32M3
Electrical isolation	yes
Device ID	$1FF7_{hex}$
Vendor ID	232hex
IP address	192.168.019.023 (configurable)

LED signaling

Types of signaling	DC OK (green)
	Alarm (red)
	Bat.-Mode (yellow)
	SOC (red, green)
	Data (red, green)

Product properties

Product type	Uninterruptible power supply
MTBF (IEC 61709, SN 29500)	> 1172000 h (25 °C)
	> 732500 h (40 °C)
	> 373400 h (60 °C)
Environmental protection directive	RoHS Directive 2011/65/EU
	WEEE
	Reach

Insulation characteristics

Protection class	III (without PE)
Degree of pollution	2

Life expectancy (electrolytic capacitors)

Time	192072 h

Dimensions

Width	40 mm
Height	130 mm
Depth	125 mm

Installation dimensions

Installation distance right/left (active)	5 mm / 5 mm (P_{Out} ≥50%)

Installation distance right/left (passive)	0 mm / 0 mm (P_{Out} ≥50%)
Installation distance right/left (active, passive)	0 mm / 0 mm (P_{Out} ≤50 %)
Installation distance top/bottom (active)	50 mm / 50 mm (P_{Out} ≥50%)
Installation distance top/bottom (passive)	40 mm / 20 mm (P_{Out} ≥50%)
Installation distance top/bottom (active, passive)	40 mm / 20 mm (P_{Out} ≤50 %)

Alternative assembly

Width	123 mm
Height	130 mm
Depth	42 mm

Mounting

Mounting type	DIN rail mounting
Mounting position	On horizontal DIN rail NS 35/7.5 and NS 35/15 acc. to EN 60715

Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0
Housing material	Metal
Hood version	Stainless steel X6Cr17
Side element version	Aluminum AlMg3

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	≤ 4000 m
Climatic class	3K3 (EN 60721)
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
Vibration (operation)	2.3g

Standards and regulations

Protective extra-low voltage

Standards/specifications	IEC 61010-1 (SELV)
	IEC 61010-2-201 (PELV)

Approval data

UL approval

Identification	UL/C-UL Listed UL 61010-1

UL approval

Identification	UL/C-UL Listed UL 61010-2-201

UL approval

Identification	UL/C-UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location)

CSA

Identification	CAN/CSA-C22.2 No. 61010-1-12

CSA

Identification	CAN/CSA-IEC 61010-2-201

CSA

Identification	CAN/CSA-C22.2 No. 213 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location)

CB scheme

Identification	IEC 61010-1
	IEC 61010-2-201

DNV

Identification	Class Guideline DNVGL-CG-0339
Note	Location classes: Temperature D (see Application/Limitation), Humidity B, Vibration A/C, EMC B

EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
EMC requirements for noise emission	EN 61000-6-3
	EN 61000-6-4
EMC requirements for noise immunity	EN 61000-6-1
	EN 61000-6-2
Interference emission	Interference emission in accordance with EN 61000-6-3 (residential and commercial)
Noise emission	Additional basic standard EN 61000-6-5 (immunity in power station), IEC/EN 61850-3 (energy supply)
Noise immunity	Immunity in accordance with EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone), IEC/EN 61850-3 (power supply)
	Immunity in accordance with EN 61000-6-2 (industrial)

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Contact discharge	8 kV (Test Level 4)
Discharge in air	15 kV (Test Level 4)

Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz
Test field strength	20 V/m (Test Level 3)
Frequency range	1 GHz ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	1 GHz ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4

Fast transients (burst)

Input	4 kV (Test Level 4 - asymmetrical)
Output	4 kV (Test Level 4 - asymmetrical)
Signal	4 kV (Test Level 4 - asymmetrical)
Comments	Criterion B

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
Input	1 kV (Test Level 3 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Output	1 kV (Test Level 3 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

I/O/S	asymmetrical
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V (Test Level 3)

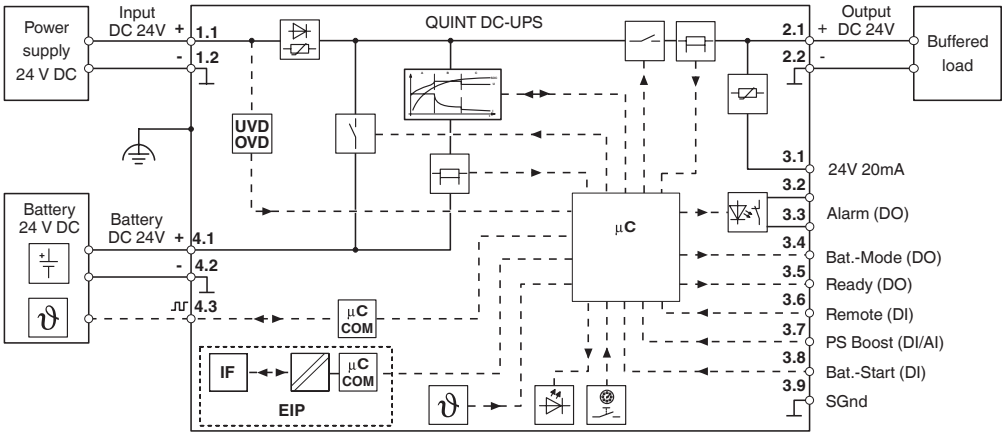
Power frequency magnetic field

Standards/regulations	EN 61000-4-8
Frequency	16.67 Hz
	50 Hz
	60 Hz

Test field strength	100 A/m
Additional text	60 s
Comments	Criterion A
Frequency	50 Hz
	60 Hz
Frequency range	50 Hz ... 60 Hz
Test field strength	1 kA/m
Additional text	3 s
Frequency	0 Hz
Test field strength	300 A/m
Additional text	DC, 60 s
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Drawings

Block diagram



Approvals

EAC
Approval ID: RU S-DE.BL08.W.00764

UL Listed
Approval ID: FILE E 123528

cUL Listed
Approval ID: FILE E 123528

EAC
Approval ID: RU-DE.B.00184/20

DNV
Approval ID: TAA00002K4

cUL Listed
Approval ID: FILE E 199827

UL Listed
Approval ID: FILE E 199827

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Classifications

ECLASS

ECLASS-9.0	27040705
ECLASS-10.0.1	27040705
ECLASS-11.0	27040705

ETIM

ETIM 8.0	EC000382

UNSPSC

UNSPSC 21.0	39121000

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1

China RoHS	Environmentally Friendly Use Period = 25;
	For information on hazardous substances, refer to the manufacturer’s declaration available under “Downloads”

Accessories

Energy storage

Energy storage - UPS-BAT/PB/24DC/4AH - 1274117

https://www.phoenixcontact.com/in/products/1274117

Energy storage, VRLA-AGM, 24 V DC, 4 Ah, automatic detection and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/PB/24DC/7AH - 1274118

https://www.phoenixcontact.com/in/products/1274118

Energy storage, VRLA-AGM, 24 V DC, 7 Ah, automatic detection and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/PB/24DC/12AH - 1274119

https://www.phoenixcontact.com/in/products/1274119

Energy storage, VRLA-AGM, 24 V DC, 12 Ah, automatic detection and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/VRLA/24DC/20AH - 1109004

https://www.phoenixcontact.com/in/products/1109004

Energy storage, lead AGM, VRLA technology, 24 V DC, 20 Ah, automatic detection and communication with QUINT UPS-IQ

Configuration software

Configuration software - UPS-CONF - 2320403

https://www.phoenixcontact.com/in/products/2320403

Configuration software for QUINT UPS IQ and TRIO UPS uninterruptible power supplies (available for free under Downloads).

Energy storage

Energy storage - UPS-BAT/VRLA/24DC/ 3.4AH - 2320306

https://www.phoenixcontact.com/in/products/2320306

Energy storage device, lead AGM, VRLA technology, 24 V DC, 3.4 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/VRLA/24DC/7.2AH - 2320319

https://www.phoenixcontact.com/in/products/2320319

Energy storage device, lead AGM, VRLA technology, 24 V DC, 7.2 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/VRLA/24DC/12AH - 2320322

https://www.phoenixcontact.com/in/products/2320322

Please use the following item in new systems: 1274119.
Energy storage device, lead AGM, VRLA technology, 24 V DC, 12 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/VRLA/24DC/38AH - 2320335

https://www.phoenixcontact.com/in/products/2320335

Energy storage device, lead AGM, VRLA technology, 24 V DC, 38 Ah, automatic detection, and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/VRLA-WTR/24DC/13AH - 2320416

https://www.phoenixcontact.com/in/products/2320416

Energy storage device, lead AGM, VRLA technology, 24 V DC, 13 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/VRLA-WTR/24DC/26AH - 2320429

https://www.phoenixcontact.com/in/products/2320429

Energy storage device, lead AGM, VRLA technology, 24 V DC, 26 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/LI-ION/24DC/120WH - 2320351

https://www.phoenixcontact.com/in/products/2320351

Energy storage device, LI-ION technology, 24 V DC, 120 Wh, for ambient temperatures of -20°C ... 60°C, automatic detection and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/LI-ION/24DC/924WH - 2908232

https://www.phoenixcontact.com/in/products/2908232

Energy storage device, LI-ION technology, 24 V DC, 924 Wh, for ambient temperatures of -25 °C ... 60 °C, automatic detection and communication with QUINT UPS-IQ

Energy storage

Energy storage - UPS-BAT/PB/24DC/20AH - 1348516

https://www.phoenixcontact.com/in/products/1348516

Energy storage, VRLA-AGM, 24 V DC, 20 Ah, automatic detection and communication with QUINT UPS-IQ

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